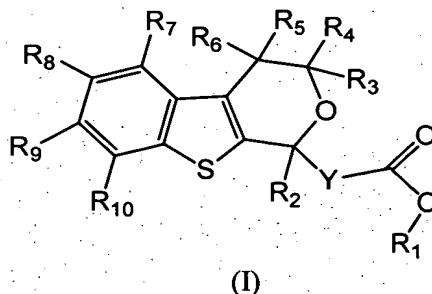


WHAT IS CLAIMED IS:

1. A pharmaceutical composition comprising a compound, or a pharmaceutically acceptable salt thereof, of a formula:



wherein:

R₁ is H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, or an arylalkyl or an alkylaryl of 7 to 12 carbon atoms;

R₂ is H, a straight chain alkyl of 1 to 12 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, an alkoxyalkyl or alkoxycarbonyl of 2 to 12 carbon atoms, an arylalkyl or alkylaryl of 7 to 12 carbon atoms, a cyanoalkyl of 1 to 8 carbon atoms, an alkylthioalkyl of 2 to 16 carbon atoms, a cycloalkyl-alkyl of 4 to 24 carbon atoms, a substituted or unsubstituted aryl, or a heteroaryl;

R₃ – R₆ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, or R₅ and R₆ together with the ring carbon atom to which they are attached form a carbonyl group;

R₇ – R₁₀ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbons atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, phenylalkynyl, alkoxy of 1 to 8 carbon

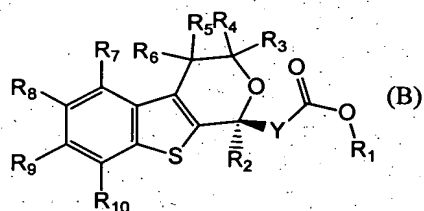
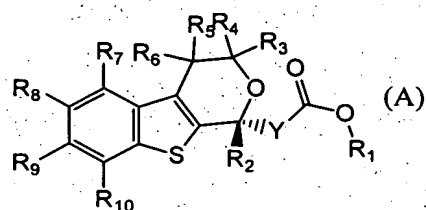
atoms, arylalkoxy of 7 to 12 carbon atoms, alkylthio of 1 to 8 carbon atoms, trifluoromethoxy, trifluoroethoxy, trifluoromethylthio, trifluoroethylthio, acyl of 1 to 7 carbon atoms, COOH, COO-alkyl, CONR₁₁R₁₂, F, Cl, Br, I, CN, CF₃, NO₂, alkylsulfinyl of 1 to 8 carbon atoms, alkylsulfonyl of 1 to 6 carbon atoms, pyrrolidinyl, or thiazolidinyl;

R₁₁ – R₁₂ are independently H, straight chain alkyl of 1 to 8 carbon atoms, branched alkyl of 3 to 12 carbon atoms, cycloalkyl of 3 to 12 carbon atoms, a substituted or unsubstituted aryl or heteroaryl;

Y is (CH₂)_n wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R₂ and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms;

and a pharmaceutically acceptable carrier.

2. The pharmaceutical composition of claim 1 wherein the compound is a crystalline form.
3. The pharmaceutical composition of Claim 1 wherein the compound, or the pharmaceutically acceptable salt thereof, is the R stereoisomer, the S stereoisomer, racemic mixtures thereof, or scalemic mixtures thereof.
4. The pharmaceutical composition of Claim 3 wherein the compound is a crystalline form.
5. The pharmaceutical composition of claim 1, wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of greater than 1:1, wherein Isomer A and Isomer B have the respective formulas:



6. The pharmaceutical composition of Claim 5 wherein the compound, or the pharmaceutically acceptable salt thereof, is 100% Isomer A.

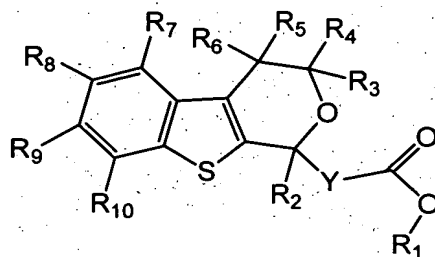
7. The pharmaceutical composition of Claim 5 wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 9:1.

8. The pharmaceutical composition of Claim 5 wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 8:1.

9. The pharmaceutical composition of Claim 5 wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 7:1.

10. The pharmaceutical composition of claim 1 comprising a compound, or the

pharmaceutically acceptable salt thereof, of the formula:



wherein:

R₁ is H;

R₂ is H, a straight chain alkyl of 2 to 4 carbon atoms, a branched alkyl of 3 carbons, aryl, or an ethoxyoxoethyl;

R₃ -R₆ are H;

R₇-R₁₀ are independently H, CN, F, Cl, Br, or methyl;

Y is (CH₂)_n wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R₂ and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms;

and a pharmaceutically acceptable carrier.

11. The pharmaceutical composition of Claim 10, wherein the compound is a crystalline form.

12. The pharmaceutical composition of Claim 10 comprising the compound, or the pharmaceutically acceptable salt thereof, wherein

R₂ is hydrogen, methyl, ethyl, n-propyl, isopropyl, n-butyl, -CH₂CO₂Et or phenyl;

R₉ is H;

R₇ is H, Cl, Br or CN;

R₈ is H or F;

R₁₀ is H, Cl, or CH₃; and

Y is (CH₂)_n, phenyl or cyclopropyl, wherein n is an integer from 1 to 3, or Y together with R₂ forms a spirocyclic cyclohexyl.

13. The pharmaceutical composition of Claim 10, wherein the compound is (5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-acetic acid, or the pharmaceutically acceptable salt thereof.

14. The pharmaceutical composition of Claim 10, wherein the compound is [(1*R*)-5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.

15. The pharmaceutical composition of Claim 10, wherein the compound is [(1*S*)-5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.

16. The pharmaceutical composition of Claim 10, wherein the compound is (5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

17. The pharmaceutical composition of Claim 10, wherein the compound is [(1*R*)-5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.

18. The pharmaceutical composition of Claim 10, wherein the compound is

[(1S)-5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1H-[1]benzothieno[2,3-c]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.

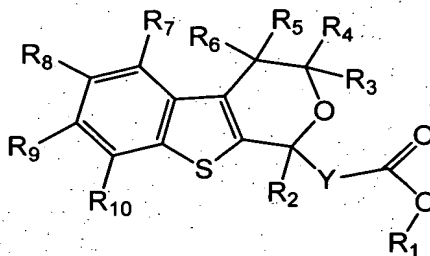
19. The pharmaceutical composition of Claim 10, wherein the compound is (5-bromo-8-methyl-1-propyl-3,4-dihydro-1H-[1]benzothieno[2,3-c]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
20. The pharmaceutical composition of Claim 10, wherein the compound is (5,8-dichloro-1-propyl-3,4-dihydro-1H-[1]benzothieno[2,3-c]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
21. The pharmaceutical composition of Claim 10, wherein the compound is (1-butyl-5,8-dichloro-3,4-dihydro-1H-[1]benzothieno[2,3-c]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
22. The pharmaceutical composition of Claim 10, wherein the compound is (5,8-dichloro-1-ethyl-3,4-dihydro-1H-[1]benzothieno[2,3-c]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
23. The pharmaceutical composition of Claim 10, wherein the compound is (6-fluoro-8-methyl-1-propyl-3,4-dihydro-1H-[1]benzothieno[2,3-c]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
24. The pharmaceutical composition of Claim 10 wherein the compound is (5,8-dichloro-1-methyl-3,4-dihydro-1H-[1]benzothieno[2,3-c]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
25. The pharmaceutical composition of Claim 10 wherein the compound is

(1-butyl-5,8-dichloro-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

26. The pharmaceutical composition of Claim 10 wherein the compound is (1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
27. The pharmaceutical composition of Claim 10 wherein the compound is (1-ethyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
28. The pharmaceutical composition of Claim 10 wherein the compound is (1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
29. The pharmaceutical composition of Claim 10 wherein the compound is (1-butyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
30. The pharmaceutical composition of Claim 10 wherein the compound is (1-phenyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
31. The pharmaceutical composition of Claim 10 wherein the compound is (1-isopropyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
32. The pharmaceutical composition of Claim 10 wherein the compound is [1-(2-ethoxy-2-oxoethyl)-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-

yl)acetic acid, or the pharmaceutically acceptable salt thereof.

33. A pharmaceutical composition comprising a compound, or a pharmaceutically acceptable salt thereof, of a formula:



(I)

wherein:

R₁ is H;

R₂ is methyl;

R₃-R₆ are H;

R₇-R₁₀ are independently H or Cl;

Y is (CH₂)_n wherein n is an integer from 0 to 3;

and a pharmaceutically acceptable carrier.

34. The pharmaceutical composition of claim 33, wherein the compound is a crystalline form.

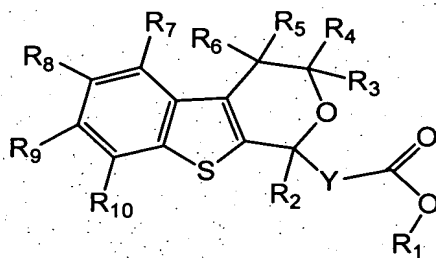
35. The pharmaceutical composition of claim 33, wherein the compound is (5,8-dichloro-1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

36. The pharmaceutical composition of claim 33, wherein the compound is (1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

37. The pharmaceutical composition of claim 33, wherein the compound is 3-(3,4-dihydro-1-methyl-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)propanoic acid, or the pharmaceutically acceptable salt thereof.

38. The pharmaceutical composition of claim 33, wherein the compound is 4-(3,4-dihydro-1-methyl-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)butanoic acid, or the pharmaceutically acceptable salt thereof.

39. A compound of a formula:



(I)

wherein:

R_1 is H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, or an arylalkyl or an alkylaryl of 7 to 12 carbon atoms;

R_2 is H, a straight chain alkyl of 1 to 12 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, an alkoxyalkyl or alkoxycarbonyl of 2 to 12 carbon atoms, an arylalkyl or alkylaryl of 7 to 12 carbon atoms, a cyanoalkyl of 1 to 8 carbon atoms, an alkylthioalkyl of 2 to 16 carbon atoms, a cycloalkyl-alkyl of 4 to 24 carbon atoms, a substituted or unsubstituted aryl, or a heteroaryl;

$R_3 - R_6$ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an

alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, or R_5 and R_6 together with the ring carbon atom to which they are attached form a carbonyl group;

$R_7 - R_{10}$ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbons atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, phenylalkynyl, alkoxy of 1 to 8 carbon atoms, arylalkoxy of 7 to 12 carbon atoms, alkylthio of 1 to 8 carbon atoms, trifluoromethoxy, trifluoroethoxy, trifluoromethylthio, trifluoroethylthio, acyl of 1 to 7 carbon atoms, COOH, COO-alkyl, $CONR_{11}R_{12}$, F, Cl, Br, I, CN, CF_3 , NO_2 , alkylsulfinyl of 1 to 8 carbon atoms, alkylsulfonyl of 1 to 6 carbon atoms, pyrrolidinyl, or thiazolidinyl;

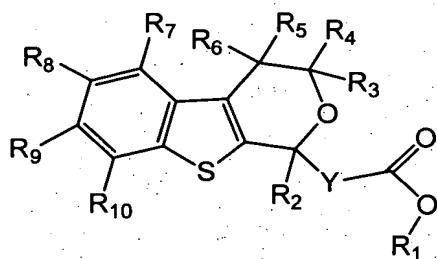
$R_{11} - R_{12}$ are independently H, straight chain alkyl of 1 to 8 carbon atoms, branched alkyl of 3 to 12 carbon atoms, cycloalkyl of 3 to 12 carbon atoms, a substituted or unsubstituted aryl or heteroaryl;

Y is $(CH_2)_n$ wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R_2 and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms; or

a pharmaceutically acceptable salt thereof.

40. A compound of claim 39, wherein the compound is a crystalline form.

41. The compound of claim 39 having the formula:



wherein:

R₁ is H;

R₂ is H, a straight chain alkyl of 1 to 4 carbon atoms, a branched alkyl of 3 carbons, aryl, or an ethoxyoxoethyl;

R₃ -R₆ are H;

R₇-R₁₀ are independently H, CN, F, Cl, Br, or methyl;

Y is (CH₂)_n wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R₂ and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms; or the pharmaceutically acceptable salt.

42. The Compound of Claim 41, wherein:

R₂ is H, methyl, ethyl, n-propyl, isopropyl, n-butyl, -CH₂CO₂Et or phenyl;

R₇ is H, Cl, Br or CN;

R₈ is H, Cl or methyl;

R₉ is H;

R₁₀ is H, Cl or methyl; and

Y is (CH₂)_n, phenyl or cyclopropyl, wherein n is an integer from 1 to 3, or Y together with R₂ forms a spirocyclic cyclohexyl;

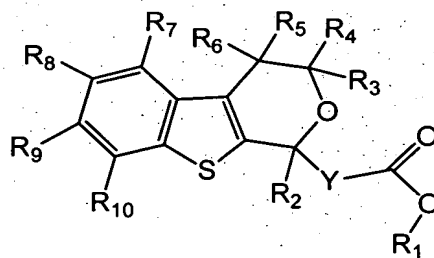
or the pharmaceutically acceptable salt thereof.

43. The compound of Claim 41, wherein the compound is a crystalline form.
44. The compound of Claim 41, wherein the compound is
(5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-acetic acid, or the pharmaceutically acceptable salt thereof.
45. The compound of Claim 41, wherein the compound is
[(1*R*)-5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.
46. The compound of Claim 41, wherein the compound is
[(1*S*)-5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.
47. The compound of Claim 41, wherein the compound is
(5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
48. The compound of Claim 41, wherein the compound is
[(1*R*)-5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.
49. The compound of Claim 41, wherein the compound is
[(1*S*)-5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.

50. The compound of Claim 41, wherein the compound is (5-bromo-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
51. The compound of Claim 41, wherein the compound is (5,8-dichloro-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
52. The compound of Claim 41, wherein the compound is (1-butyl-5,8-dichloro-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
53. The compound of Claim 41, wherein the compound is (5,8-dichloro-1-ethyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
54. The compound of Claim 41, wherein the compound is (6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
55. The compound of Claim 41, wherein the compound is (1-ethyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
56. The compound of Claim 41, wherein the compound is (1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

57. The compound of Claim 41, wherein the compound is (1-butyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
58. The compound of Claim 41, wherein the compound is (1-phenyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
59. The compound of Claim 41, wherein the compound is (1-isopropyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
60. The compound of Claim 41, wherein the compound is [1-(2-ethoxy-2-oxoethyl)-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.

61. A compound of a formula:



(I)

wherein:

R₁ is H;

R₂ is methyl;

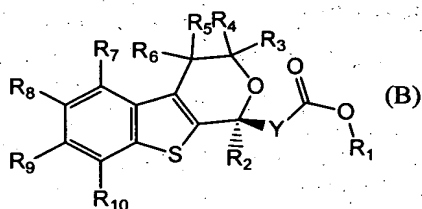
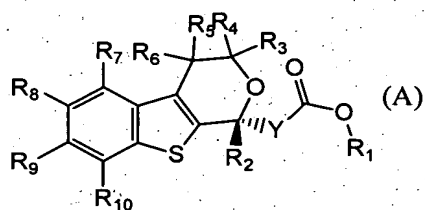
R₃-R₆ are H;

R₇-R₁₀ are independently H or Cl;

Y is (CH₂)_n wherein n is an integer from 0 to 3;

or a pharmaceutically acceptable salt thereof.

62. The compound of claim 61, wherein the compound is a crystalline form.
63. The compound of claim 61, wherein the compound is (5,8-dichloro-1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
64. The compound of claim 61, wherein the compound is (1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
65. A method of obtaining the compounds of formulas (A) and (B):



wherein:

R_1 is H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, or an arylalkyl or an alkylaryl of 7 to 12 carbon atoms;

R₂ is H, a straight chain alkyl of 1 to 12 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, an alkoxyalkyl or alkoxycarbonyl of 2 to 12 carbon atoms, an arylalkyl or alkylaryl of 7 to 12 carbon atoms, a cyanoalkyl of 1 to 8 carbon atoms, an alkylthioalkyl of 2 to 16 carbon atoms, a cycloalkyl-alkyl of 4 to 24 carbon atoms, a substituted or unsubstituted aryl, or a heteroaryl;

R₃ – R₆ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, or R₅ and R₆ together with the ring carbon atom to which they are attached form a carbonyl group;

R₇ – R₁₀ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbons atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, phenylalkynyl, alkoxy of 1 to 8 carbon atoms, arylalkoxy of 7 to 12 carbon atoms, alkylthio of 1 to 8 carbon atoms, trifluoromethoxy, trifluoroethoxy, trifluoromethylthio, trifluoroethylthio, acyl of 1 to 7 carbon atoms, COOH, COO-alkyl, CONR₁₁R₁₂, F, Cl, Br, I, CN, CF₃, NO₂, alkylsulfinyl of 1 to 8 carbon atoms, alkylsulfonyl of 1 to 6 carbon atoms, pyrrolidinyl, or thiazolidinyl;

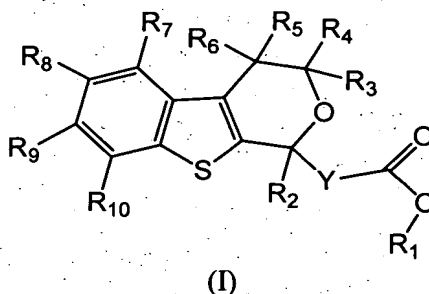
R₁₁ – R₁₂ are independently H, straight chain alkyl of 1 to 8 carbon atoms, branched alkyl of 3 to 12 carbon atoms, cycloalkyl of 3 to 12 carbon atoms, a substituted or unsubstituted aryl or heteroaryl;

Y is (CH₂)_n wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R₂ and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms; and

said method comprising the steps of:

- (a) adding a concentrated solution of a racemic mixture of the compound to a chiral High Performance Liquid Chromatography (HPLC) column;
- (b) eluting the (R) and (S) enantiomers from the column in step (a) with isopropyl alcohol and heptane solvent containing TFA;
- (c) drying the (R) and (S) enantiomers separately;
- (d) dissolving the (R) and (S) enantiomers from step (c) separately in a suitable solvent;
- (e) injecting the dissolved (R) and (S) enantiomers from step (d) separately onto chiral HPLC column;
- (f) eluting the respective (R) and (S) enantiomers at a rate of 1.0 ml/minute from the column in step (e) with isopropyl alcohol and heptane solvent containing TFA, wherein the (R) enantiomer has a different retention time from the (S) enantiomer and each respective enantiomer is detected by its absorption at 215 nm;
- (g) combining the (R) enantiomer eluants from step (f) and drying the (R) enantiomer to obtain the (R) enantiomer compound; and
- (h) combining the (S) enantiomer eluants from step (f) and drying the (S) enantiomer to obtain the (S) enantiomer compound.

66. A method of treating or preventing a Hepatitis C viral infection in a mammal comprising the steps of providing the mammal with a therapeutically effective amount of a compound of a formula:



wherein:

R₁ is H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, or an arylalkyl or an alkylaryl of 7 to 12 carbon atoms;

R₂ is H, a straight chain alkyl of 1 to 12 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, an alkoxyalkyl or alkoxycarbonyl of 2 to 12 carbon atoms, an arylalkyl or alkylaryl of 7 to 12 carbon atoms, a cyanoalkyl of 1 to 8 carbon atoms, an alkylthioalkyl of 2 to 16 carbon atoms, a cycloalkyl-alkyl of 4 to 24 carbon atoms, a substituted or unsubstituted aryl, or a heteroaryl;

R₃ – R₆ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, or R₅ and R₆ together with the ring carbon atom to which they are attached form a carbonyl group;

R₇ – R₁₀ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbons atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, phenylalkynyl, alkoxy of 1 to 8 carbon atoms, arylalkoxy of 7 to 12 carbon atoms, alkylthio of 1 to 8 carbon atoms,

trifluoromethoxy, trifluoroethoxy, trifluoromethylthio, trifluoroethylthio, acyl of 1 to 7 carbon atoms, COOH, COO-alkyl, CONR₁₁R₁₂, F, Cl, Br, I, CN, CF₃, NO₂, alkylsulfinyl of 1 to 8 carbon atoms, alkylsulfonyl of 1 to 6 carbon atoms, pyrrolidinyl, or thiazolidinyl;

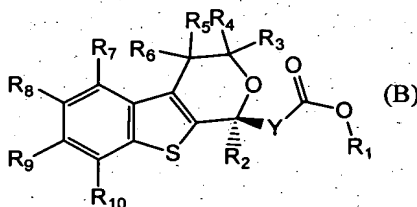
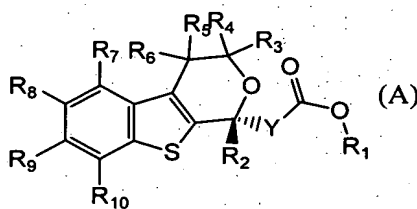
R₁₁ – R₁₂ are independently H, straight chain alkyl of 1 to 8 carbon atoms, branched alkyl of 3 to 12 carbon atoms, cycloalkyl of 3 to 12 carbon atoms, a substituted or unsubstituted aryl or heteroaryl;

Y is (CH₂)_n wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R₂ and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms;

or a pharmaceutically acceptable salt thereof.

67. The method of claim 66, wherein the compound is a crystalline form.

68. The method of claim 66, wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of greater than 1:1, wherein Isomer A and Isomer B have the respective formulas:



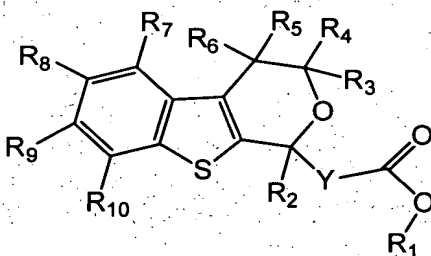
69. The method of Claim 68, wherein the compound, or the pharmaceutically acceptable salt thereof, is 100% Isomer A.

70. The method of Claim 68, wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 9:1.

71. The method of Claim 68, wherein the compound, or the pharmaceutically acceptable salt thereof, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 8:1.

72. The method of Claim 68, wherein the compound, or the pharmaceutically acceptable salt thereof, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 7:1.

73. The method of claim 66, wherein the compound has the formula:



wherein:

R₁ is H;

R₂ is H, a straight chain alkyl of 1 to 4 carbon atoms, a branched alkyl of 3 carbons, aryl, or an ethoxyoxoethyl;

R₃-R₆ are H;

R₇-R₁₀ are independently H, CN, F, Cl, Br, or methyl;

Y is $(\text{CH}_2)_n$ wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R_2 and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms;

or the pharmaceutically acceptable salt thereof.

74. The method of Claim 73 comprising the compound, or the pharmaceutically acceptable salt thereof, wherein:

R_2 is H, methyl, ethyl, n-propyl, isopropyl, n-butyl, $-\text{CH}_2\text{CO}_2\text{Et}$ or phenyl;

R_7 is H, Cl, Br or CN;

R_8 is H, Cl or methyl;

R_9 is H;

R_{10} is H, Cl or methyl; and

Y is $(\text{CH}_2)_n$, phenyl or cyclopropyl, wherein n is an integer from 1 to 3, or Y together with R_2 forms a spirocyclic cyclohexyl.

75. The method of Claim 73, wherein the compound is a crystalline form.

76. The method of Claim 73, wherein the compound is
(5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

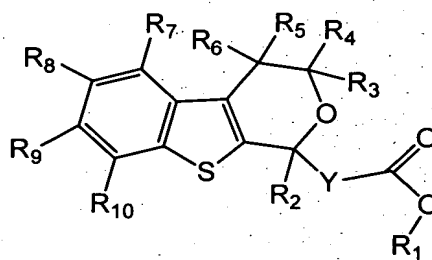
77. The method of Claim 73, wherein the compound is
[(1*R*)-5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.

78. The method of Claim 73, wherein the compound is
[(1S)-5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-
c]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.
79. The method of Claim 73, wherein the compound is
(5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-
c]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
80. The method of Claim 73, wherein the compound is
[(1R)-5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-
[1]benzothieno[2,3-c]pyran-1-yl]acetic acid, or the pharmaceutically acceptable
salt thereof.
81. The method of Claim 73, wherein the compound is
[(1S)-5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-
[1]benzothieno[2,3-c]pyran-1-yl]acetic acid, or the pharmaceutically acceptable
salt thereof.
82. The method of Claim 73, wherein the compound is
(5-bromo-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-c]pyran-
1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
83. The method of Claim 73, wherein the compound is
(5,8-dichloro-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-c]pyran-1-
yl)acetic acid, or the pharmaceutically acceptable salt thereof.
84. The method of Claim 73, wherein the compound is
(1-butyl-5,8-dichloro-3,4-dihydro-1*H*-[1]benzothieno[2,3-c]pyran-1-
yl)acetic acid, or the pharmaceutically acceptable salt thereof.

85. The method of Claim 73, wherein the compound is
(5,8-dichloro-1-ethyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
86. The method of Claim 73, wherein the compound is
(6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
87. The method of Claim 73, wherein the compound is
(1-ethyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
88. The method of Claim 73, wherein the compound is
(1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
89. The method of Claim 73, wherein the compound is
(1-butyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
90. The method of Claim 73, wherein the compound is
(1-phenyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
91. The method of Claim 73, wherein the compound is
(1-isopropyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

92. The method of Claim 73, wherein the compound is
[1-(2-ethoxy-2-oxoethyl)-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.

93. A method of treating or preventing a Hepatitis C viral infection in a mammal comprising providing the mammal with a therapeutically effective amount of a compound of a formula:



(I)

wherein:

R₁ is H;

R₂ is methyl;

R₃-R₆ are H;

R₇-R₁₀ are independently H or Cl;

Y is (CH₂)_n wherein n is an integer from 0 to 3;

or a pharmaceutically acceptable salt thereof.

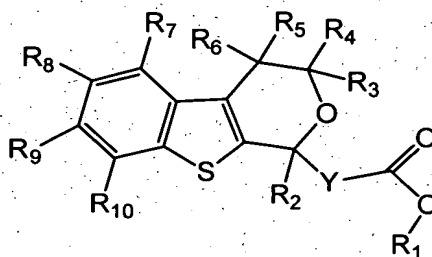
94. The method of claim 93, wherein the compound is a crystalline form.

95. The method of claim 93, wherein the compound is
(5,8-dichloro-1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

96. The method of claim 93, wherein the compound is
(1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or

the pharmaceutically acceptable salt thereof.

97. A method of inhibiting replication of a Hepatitis C virus comprising contacting the Hepatitis C virus with a compound of a formula:



(I)

wherein:

R₁ is H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, or an arylalkyl or an alkylaryl of 7 to 12 carbon atoms;

R₂ is H, a straight chain alkyl of 1 to 12 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, an alkynyl of 2 to 7 carbon atoms, an alkoxyalkyl or alkoxy carbonyl of 2 to 12 carbon atoms, an arylalkyl or alkylaryl of 7 to 12 carbon atoms, a cyanoalkyl of 1 to 8 carbon atoms, an alkylthioalkyl of 2 to 16 carbon atoms, a cycloalkyl-alkyl of 4 to 24 carbon atoms, a substituted or unsubstituted aryl, or a heteroaryl;

R₃ – R₆ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, furanylethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, or R₅ and R₆ together with the ring carbon atom to which they are attached form a carbonyl group;

$R_7 - R_{10}$ are independently H, a straight chain alkyl of 1 to 8 carbon atoms, a branched alkyl of 3 to 12 carbon atoms, a cycloalkyl of 3 to 12 carbon atoms, an alkenyl of 2 to 7 carbon atoms, a substituted or unsubstituted aryl, a substituted or unsubstituted heteroaryl, furanylmethyl, arylalkyl or alkylaryl of 7 to 12 carbon atoms, alkynyl of 2 to 7 carbon atoms, phenylalkynyl, alkoxy of 1 to 8 carbon atoms, arylalkoxy of 7 to 12 carbon atoms, alkylthio of 1 to 8 carbon atoms, trifluoromethoxy, trifluoroethoxy, trifluoromethylthio, trifluoroethylthio, acyl of 1 to 7 carbon atoms, COOH, COO-alkyl, CONR₁₁R₁₂, F, Cl, Br, I, CN, CF₃, NO₂, alkylsulfinyl of 1 to 8 carbon atoms, alkylsulfonyl of 1 to 6 carbon atoms, pyrrolidinyl, or thiazolidinyl;

$R_{11} - R_{12}$ are independently H, straight chain alkyl of 1 to 8 carbon atoms, branched alkyl of 3 to 12 carbon atoms, cycloalkyl of 3 to 12 carbon atoms, a substituted or unsubstituted aryl or heteroaryl;

Y is (CH₂)_n wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R₂ and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms;

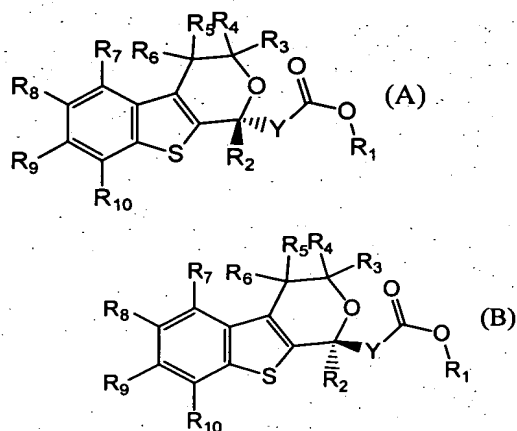
or a pharmaceutically acceptable salt thereof.

98. The method of Claim 97, wherein the compound is a crystalline form.

99. The method of Claim 97, wherein the compound, or the pharmaceutically acceptable salt thereof, includes the R stereoisomer, the S stereoisomer, racemic mixtures thereof or scalemic mixtures thereof.

100. The method of Claim 99, wherein the compound is a crystalline form.

101. The method of Claim 97, wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of greater than 1:1, wherein Isomer A and Isomer B have the respective formulas:



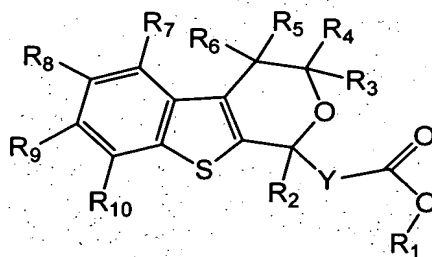
102. The method of Claim 101, wherein the compound, or the pharmaceutically acceptable salt thereof, is 100% Isomer A.

103. The method of Claim 101, wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 9:1.

104. The method of Claim 101, wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 8:1.

105. The method of Claim 101, wherein the compound, or the pharmaceutically acceptable salt thereof, has a ratio of Isomer A to Isomer B of at least about 7:1.

106. The method of claim 101, wherein the compound has the formula:



wherein:

R₁ is H;

R₂ is H, a straight chain alkyl of 1 to 4 carbon atoms, a branched alkyl of 3 carbons, aryl, or an ethoxyoxoethyl;

R₃-R₆ are H;

R₇-R₁₀ are independently H, CN, F, Cl, Br, or methyl;

Y is (CH₂)_n wherein n is an integer from 0 to 3, aryl or heteroaryl, cycloalkyl or heterocycloalkyl, or R₂ and Y together with the ring carbon atom to which they are attached may additionally form a spirocyclic cycloalkyl or spirocyclic heterocycloalkyl ring of 3 to 8 carbon atoms;

or the pharmaceutically acceptable salt thereof.

107. The method of Claim 106, comprising the compound, or the pharmaceutically acceptable salt thereof, wherein:

R₂ is H, methyl, ethyl, n-propyl, isopropyl, n-butyl, -CH₂CO₂Et or phenyl;

R₇ is H, Cl, Br or CN;

R₈ is H, Cl or methyl;

R₉ is H;

R₁₀ is H, Cl or methyl; and

Y is (CH₂)_n, phenyl or cyclopropyl, wherein n is an integer from 1 to 3, or Y together with R₂ forms a spirocyclic cyclohexyl.

108. The method of Claim 106, wherein the compound is a crystalline form.

109. The method of Claim 106, wherein the compound is

(5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

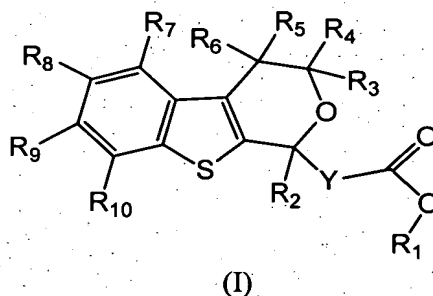
110. The method of Claim 106, wherein the compound is
[(1R)-5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-
c]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.
111. The method of Claim 106, wherein the compound is
[(1S)-5-cyano-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-
c]pyran-1-yl]acetic acid, or the pharmaceutically acceptable salt thereof.
112. The method of Claim 106, wherein the compound is
(5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-
c]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
113. The method of Claim 106, wherein the compound is
[(1R)-5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-
[1]benzothieno[2,3-c]pyran-1-yl]acetic acid, or the pharmaceutically acceptable
salt thereof.
114. The method of Claim 106, wherein the compound is
[(1S)-5-cyano-6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-
[1]benzothieno[2,3-c]pyran-1-yl]acetic acid, or the pharmaceutically acceptable
salt thereof.
115. The method of Claim 106, wherein the compound is
(5-bromo-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-c]pyran-
1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
116. The method of Claim 106, wherein the compound is
(5,8-dichloro-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-c]pyran-1-
yl)acetic acid, or the pharmaceutically acceptable salt thereof.

117. The method of Claim 106, wherein the compound is
(1-butyl-5,8-dichloro-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
118. The method of Claim 106, wherein the compound is
(5,8-dichloro-1-ethyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
119. The method of Claim 106, wherein the compound is
(6-fluoro-8-methyl-1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
120. The method of Claim 106, wherein the compound is
(1-ethyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
121. The method of Claim 106, wherein the compound is
(1-propyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
122. The method of Claim 106, wherein the compound is
(1-butyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.
123. The method of Claim 106, wherein the compound is
(1-phenyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

124. The method of Claim 106, wherein the compound is
(1-isopropyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid,
or the pharmaceutically acceptable salt thereof.

125. The method of Claim 106, wherein the compound is
[1-(2-ethoxy-2-oxoethyl)-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-
yl]acetic acid, or the pharmaceutically acceptable salt thereof.

126. A method of inhibiting replication of a Hepatitis C virus comprising
contacting the Hepatitis C virus with a compound of a formula:



wherein:

R₁ is H;

R₂ is methyl;

R₃-R₆ are H;

R₇-R₁₀ are independently H or Cl;

Y is (CH₂)_n wherein n is an integer from 0 to 3;

or a pharmaceutically acceptable salt thereof.

127. The method of claim 126, wherein the compound is a crystalline form.

128. The method of claim 126, wherein the compound is

(5,8-dichloro-1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or the pharmaceutically acceptable salt thereof.

129. The method of claim 126, wherein the compound is
(1-methyl-3,4-dihydro-1*H*-[1]benzothieno[2,3-*c*]pyran-1-yl)acetic acid, or
the pharmaceutically acceptable salt thereof.